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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

ASSISTANT COMMISSIONER FOR PATENTS

Washington, D.C. 20231

Attorney's Docket Number: 4805.0072-02

Prior Application:

Art Unit: 2753

Examiner: W. Young

SIR: This is a request for filing a

☐ Continuation ☒ Divisional Application under 37 C.F.R. § 1.53(b) of pending prior application Serial No. 08/735,572 filed October 23, 1996 of Han JUNG et al. for KARAOKE CD FORMAT DEVICE FOR CONTROLLING AUDIO SIGNALS UTILIZING THE SAME

1. ☒ Enclosed is a complete copy of the prior application including the oath or Declaration and drawings, if any, as originally filed. I hereby verify that the attached papers are a true copy of prior application Serial No. 08/735,572 as originally filed on October 23, 1996.
2. ☐ Enclosed is a substitute specification under 37 C.F.R. § 1.125.
3. ☐ Cancel Claims \_\_\_\_\_.
4. ☒ A Preliminary Amendment is enclosed.
5. ☒ The filing fee is calculated on the basis of the claims existing in the prior application as amended at 3 and 4 above.

For	:	Number Filed	:	Number Extra	:	Rate	:	Basic Fee \$760.00
Total	:		:		:		:	
Claims	:	8 -20=	:	0	:	x\$ 22.00=	:	\$
Independent	:		:		:		:	
Claims	:	2 -3=	:	0	:	x\$ 82.00=	:	
Multiple Dependent Claim(s) (if applicable)					:	+\$270.00=	:	
Total					=	:	:	\$760.00
Reduction by ½ for filing by small entity					:	:	:	-
TOTAL FILING FEE					=	:	:	\$760.00

6. ☒ A check in the amount of \$ 760.00 to cover the filing fee is enclosed.
7. ☒ The Commissioner is hereby authorized to charge any fees which may be required including fees due under 37 C.F.R. § 1.16 and any other fees due under 37 C.F.R. § 1.17, or credit any overpayment during the pendency of this application to Deposit Account No. 06-0916.
8. ☒ Amend the specification by inserting before the first line, the sentence:  
  
 --This is a ☐ continuation ☒ division of application Serial No. 08/735,572, filed October 23, 1996, which is a continuation of 08/307,288, filed September 16, 1994, now abandoned.-- all of which are incorporated herein by reference.
9. ☐ New formal drawings are enclosed.
10. ☒ The prior application is assigned of record to: Goldstar Co., Ltd.
11. ☒ Priority of application Serial No. 18841/1993, filed on September 17, 1993 in Korea (country) is claimed under 35 U.S.C. § 119. A certified copy  
  
☐ is enclosed or ☒ is on file in the prior application.
12. ☐ A verified statement claiming small entity status  
  
☐ is enclosed or ☐ is on file in the prior application.
13. ☒ The power of attorney in the prior application is to at least one of the following: FINNEGAN, HENDERSON, FARABOW, GARRETT & DUNNER, L.L.P., Douglas B. Henderson, Reg. No. 20,291; Ford F. Farabow, Jr., Reg. No. 20,630; Arthur S. Garrett, Reg. No. 20,338; Donald R. Dunner, Reg. No. 19,073; Brian G. Brunsvold, Reg. No. 22,593; Tipton D. Jennings, IV, Reg. No. 20,645; Jerry D. Voight, Reg. No. 23,020; Laurence R. Hefter, Reg. No. 20,827; Kenneth E. Payne, Reg. No. 23,098; Herbert H. Mintz, Reg. No. 26,691; C. Larry O'Rourke, Reg. No. 26,014; Albert J. Santorelli, Reg. No. 22,610; Michael C. Elmer, Reg. No. 25,857; Richard H. Smith, Reg. No. 20,609; Stephen L. Peterson, Reg. No. 26,325; John M. Romary, Reg. No. 26,331; Bruce C. Zotter, Reg. No. 27,680; Dennis P. O'Reilley, Reg.

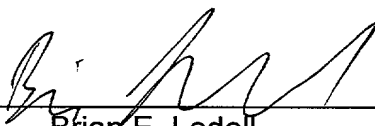
08/735,572

[illegible]

14. ☐ The power appears in the original declaration of the prior application.
15. ☐ Since the power does not appear in the original declaration, a copy of the power in the prior application is enclosed.
16. ☒ Please address all correspondence to FINNEGAN, HENDERSON, FARABOW, GARRETT and DUNNER, L.L.P., 1300 I Street, N.W., Washington, D.C. 20005-3315.
17. ☐ Recognize as associate attorney \_\_\_\_\_  
\_\_\_\_\_  
(name, address & Reg. No.)
18. ☐ Also enclosed is \_\_\_\_\_

PETITION FOR EXTENSION. If any extension of time is necessary for the filing of this application, including any extension in the parent application, serial no. 08/735,572, filed October 23, 1998, for the purpose of maintaining copendency between the parent application and this application, and such extension has not otherwise been requested, such an extension is hereby requested, and the Commissioner is authorized to charge necessary fees for such an extension to our Deposit Account No. 06-0916. A duplicate copy of this paper is enclosed for use in charging the deposit account.

FINNEGAN, HENDERSON, FARABOW,  
GARRETT & DUNNER, L.L.P.

By:   
Brian E. Ledell  
Reg. No.: 42,784

Date: December 11, 1998

PATENT

Attorney Docket No. 4805.0072-02

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of: )

Han JUNG et al. )

Divisional of )

Serial No.: 08/735,572 )

Filed: October 23, 1996 )

For: KARAOKE CD FORMAT DEVICE )

FOR CONTROLLING AUDIO )

SIGNALS UTILIZING THE SAME )

Group Art Unit: 2753

Examiner: W. Young



Assistant Commissioner of Patents

Washington, D.C. 20231

Sir:

**PRELIMINARY AMENDMENT**

Prior to examination of this application on the merits, please amend the application as follows:

**IN THE TITLE:**

Please amend the title to read --APPARATUS AND METHOD FOR PROCESSING AUDIO SIGNALS RECORDED ON A MEDIUM--.

**IN THE SPECIFICATION:**

Page 3, line 23, after "music" (second occurrence) insert -- accompaniment sound --; and  
line 24, after "music" insert -- accompaniment sound --.

Page 5, line 1, change "playing" to --vocal--;

LAW OFFICES

FINNEGAN, HENDERSON,  
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202-408-4000

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line 11, change "playing" to --vocal--;

Page 6, line 22, change "playing" to --vocal--;

Page 7, line 6, change "playing" to --vocal--;

line 19, change "playing" to --vocal--;

Page 8, line 8, change "playing" to --vocal--;

line 16, change "playing" to --vocal--;

Page 9, line 1, change "playing" to --vocal--;

line 9, change "playing" to --vocal--;

line 14, change "playing" to --vocal--;

line 15, change "playing" to --vocal--.

line 18, change "playing" to --vocal-- (both occurrences).

Page 10, line 19, change "playing" to --vocal--;

Page 11, line 2, change "playing" to --vocal--;

Page 11, line 19, change "playing" to --vocal--.

Page 12, line 3, change "playing" to --vocal--.

#### IN THE CLAIMS:

Please cancel claims 1-8 without prejudice or disclaimer and add new claims 9-17 as follows:

–9. A device for processing an audio signal comprising:

a demodulator for demodulating a digital signal recorded on a medium, said digital signal including: a video signal, a plurality of audio signals composed of at least one sector of audio



14. A method for processing an audio signal, comprising the steps of:

demodulating a digital signal recorded on a medium, said digital signal including a video signal, a plurality of audio signals composed of at least one sector of audio information, and indicating information located in front of each said audio signal and video signal;

receiving said plurality of audio signals and the indicating information;

extracting the indicating information and separating said plurality of audio signals based on said extracted indicating information; and

selecting one of the separated audio signals in response to an input applied from a key matrix.

15. The method of claim 14, wherein the step of extracting includes extracting accompaniment sound corresponding to one of said audio signals.

16. The method of claim 14, wherein the step of receiving includes receiving the plurality of audio signals from portions of the medium between sectors of the video signal. --

#### REMARKS

By this Amendment, Applicants have canceled claims 1-8 and added new claims 9-16.

Additionally, the specification has been amended to conform to the amendments made in the parent application.

If there are any other fees due in connection with the filing of this response, please charge the fees to our Deposit Account No. 06-0916. If a fee is required for an extension of time under



37 C.F.R. § 1.136 not accounted for above, such an extension is requested and the fee should also be charged to our Deposit Account.

Respectfully submitted,

FINNEGAN, HENDERSON, FARABOW,  
GARRETT & DUNNER, L.L.P.

By: 

Brian E. Ledell  
Reg. No. 42,784

Dated: December 11, 1998

37 C.F.R. § 1.136

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UNITED STATES PATENT APPLICATION

OF

HAN JUNG

AND

KI WON KIM

FOR

KARAOKE CD FORMAT AND DEVICE  
FOR CONTROLLING AUDIO SIGNALS  
UTILIZING THE SAME

KARAOKE CD FORMAT AND DEVICE FOR CONTROLLING AUDIO SIGNALS  
UTILIZING THE SAME

BACKGROUND OF THE INVENTION

FIELD OF THE INVENTION

This invention relates to a karaoke CD system, more particularly to a karaoke CD format and a device for processing audio signals utilizing the karaoke CD format which provides a user with selective reproduction of the voice of a player.

DESCRIPTION OF RELATED ART

As shown in FIG. 1, a general disc data layout of a karaoke CD includes lead in/lead out areas 1 and 6 formed at the lead in and lead out of the CD for encoding CD-ROMXA data containing empty sectors of mode 2/form 2 therein, and program areas 2, 3, 4, and 5.

The program areas include a volume descriptor area 2 formed next to the lead in area 1 containing the path name of a CDI application program described in compact disc bridge system description. The basic data area 3 is for recording the title of a song, the name of the singer, the composer of the song, and the songwriter. The CDI application program area 4 is for recording an application program required for converting into compact disc bridge system description which will facilitate the operation of a disc in CD-RTOS (Real Time Operating System) in a CD-I/FMV player. The MPEG data area 5 is for recording MPEG (Moving Picture Experts Group) video and audio data.

The lead in area 1 has records of the number of songs, the period of time of each song and total period of time, and the lead in part and index part of each song. The lead out area 6 has record of the end of the program.

As shown in FIG. 2, a conventional karaoke CD system includes a first demodulation part 11 for demodulating EFM (Eight to Fourteen Modulation) signals. A second modulation part 12 for demodulating signals recorded in interleaved sectors for a CD-ROM upon receiving signals from the first demodulation part 11. A CPU 16 for demultiplexing system flow on receiving signals from the second demodulation part 12. A first, and a second memory 17 and 18 for storing video and audio data received from the CPU 16 respectively. A MPEG video decoder 19 and a MPEG audio decoder 20 for decoding MPEG video signals and MPEG audio signals of the video and audio data stored in the first and the second memories 17 and 18 respectively. A STC (System Time Clock) 23 for clocking the system time under the control of the CPU 16. A video and audio signal processing part 13 having a video presentation part 21 for comparing the STC of the STC part 23 to PTS (Presentation Time Stamps) in the bit stream received from the MPEG video decoder 19. An audio presentation part 22 for comparing the STC of the STC part 23 to PTS (Presentation Time Stamps) in the bit stream received from the MPEG audio decoder 20. A control part 10 for controlling both the first and the second demodulation parts 11 and 12 and for controlling the video and audio signal processing part 13 according to a key signal applied thereto. A Digital-to-Analog (D/A) converter 14 for converting

the video signal received from the video presentation part 21 and outputting the converted signal to a monitor under the control of the control part 10, and a D/A converter 15 for converting the audio signal received from the audio presentation part 22 and applying the converted signal to a speaker under the control of the control part 10.

The interleaving of a conventional MPEG video and MPEG audio sectors is as shown in FIG. 3.

Since the quantity of MPEG video data is much greater than the quantity of MPEG audio data, an MPEG audio sector A is periodically positioned in between MPEG video sectors V. For example, one MPEG audio sector A may be present in every four MPEG video sectors V.

Shown in Table 1 is the audio channel encoding, which is to be explained in detail hereinafter.

Table 1

	Stereo Music Program	Special Music Program
CH 0	Left	mono without vocal
CH 1	Right	mono with vocal

The karaoke CD format includes a stereo music program having a left audio channel for encoding on MPEG audio channel 0 and a right audio channel for encoding on MPEG audio channel 1, and a special music program having one channel for encoding music without vocal and the other channel for encoding music with vocal.

Operation of the conventional karaoke CD system is to be explained hereinafter.

The karaoke data is read in through a pick-up, having EFM demodulated and CD errors corrected through the first demodulation part 11 which is an EFM/CIRC (Cross Interleave Read Solomon Code) decoder. The data interleaved at encoding is demodulated through the second demodulation part 12 which is a CD-ROM decoder. The data is divided into audio data and video data through the video and audio signal processing part 13 under the demultiplexing operation of the CPU 16 and applied to the MPEG video decoder 19 and MPEG audio decoder 20 through the first and the second memories 17 and 18 respectively.

The MPEG video decoder 19 and the MPEG audio decoder 20, restore the compressed data, and compare the STC from the STC part 23 to the PTS in the restored data to control the presentation time of the data.

However, such a conventional karaoke-CD system has the disadvantage of being unable to obtain stereophony sound in the case where music without vocal and music with vocal of a specific music program is carried on the first channel (Left) and the second channel (Right).

#### SUMMARY OF THE INVENTION

The object of this invention is to provide a user with selective reproduction of playing sound, i.e., voice (song of a singer) and accompaniment sound.

These and other objects and features of this invention can be achieved by providing a karaoke CD format which is divided into video sectors and audio sectors, and the audio sectors are further

divided into a part for recording accompaniment sound and playing sound at the same time and another part for recording accompaniment sound only. The audio sectors are further provided to record coding information for distinguishing between the audio data stored in the two parts. There is provided a device for controlling audio signals using a karaoke CD format including a control means for controlling the entire system according to signals applied from outside the system. There is provided a demodulation means for demodulating a signal read in from a CD which distinguishes between a part containing recorded accompaniment sound and playing sound at the same time, and another part containing recorded accompaniment sound only under the control of the control means. There is provided an audio signal processing means for processing audio signals using signals received from the demodulation means and transmitting data corresponding to a first data signal corresponding to the accompaniment sound and playing sound and a second data signal corresponding to the playing sound only, a switching means for selecting one of the first or second data signals and outputting the selected data under the control of the control means, and a D/A converting means for converting the data received from the switching means and applying the converted data to a speaker under the control of the control means.

## BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is a layout of a karaoke CD data.

FIG. 2 is a block diagram of a conventional karaoke CD system.

FIG. 3 is a diagram showing a conventional interleaving of MPEG audio/video sectors.

FIG. 4 is a diagram of a subheader in accordance with this invention.

FIG. 5 is a diagram showing an interleaving of MPEG audio/video sectors in accordance with this invention.

FIG. 6 is a schematic block diagram of a device for controlling karaoke CD audio signal in accordance with this invention.

FIG. 7 is an operational flow diagram of a device for controlling karaoke CD audio signals.

FIG. 8 is an MPEG audio format in accordance with this invention.

## DETAILED DESCRIPTION OF THE INVENTION

This invention is to be explained in detail hereinafter, referring to the attached drawings.

A subheader in accordance with this invention is shown in FIG. 4. To distinguish audio data Aa, containing both playing sound and accompaniment sound, and audio data Ab, containing only accompaniment data, there is provided subheader information in an audio packet, the subheader includes coding information encoded therein with a distinguishing value applied thereto.



The coding information is, included into a subheader of each sector at data encoding as a distinguishing value, standardized as 0FH in case of MPEG video, and 7FH in case of MPEG audio, wherein new coding information (for example 3F) is added to use for a distinguishing signal for the audio data sector Aa, having both playing sound and accompaniment sound, and the audio data sector Ab having only accompaniment sound.

Interleaving of MPEG video and MPEG audio sectors is as shown in FIG. 5. The interleaving of video data and audio data sectors, in general has 4 to 5 consecutive video sectors V with one audio sector A added thereto, where coding information is used to distinguish a sector containing the encoded Aa and Ab.

Since the increase of buffer size due to the newly added audio sectors Aa and Ab is infinitesimal compared to the image data, it can be ignored.

That is, the karaoke CD format in accordance with this invention includes a CD format divided into video sectors and audio sectors, and the audio sectors are further divided into a part Aa for recording both accompaniment sound and playing sound at the same time and a part Ab for recording accompaniment sound only, and the audio sectors are further provided to record coding information for distinguishing between audio data stored in the two parts.

As shown in FIG. 6, a device for controlling a karaoke CD audio signal in accordance with this invention in a state having the audio data interleaved as explained above, includes a control

part 30, a demodulation part 40, an audio signal processing part 70, a switch 50, and a D/A converting part 60.

The control part 30 controls the entire system according to the signal applied through a key matrix 80.

The demodulation part 40 includes a first demodulator 41 for carrying out EFM demodulation from the CD format provided to distinguish a part Aa for recording accompaniment sound and playing sound at the same time, and a part Ab for recording accompaniment sound only, where the part is under the control of the control part 30, and a second demodulator 42 for demodulating signals recorded in interleaved sectors for a CD-ROM from the signal received from the first demodulator 41 and applying the second demodulated signal to the audio processing part 70 under the control of the control part 30, thereby demodulating the signal read in from the CD format provided to distinguish a part Aa, for recording accompaniment sound and playing sound at the same time, and a part Ab, for recording accompaniment sound only, under the control of the control part 30.

The audio signal processing part 70 includes a CPU 71 for separating audio data and time data from the signal received from the second demodulator 42 under the control of the control part 30, a STC (System Time Clock) part 77 for generating a synchronizing signal using time information received from the CPU 71, a memory 72 for storing the audio data received from the CPU 71, an MPEG audio decoder 73 for decoding the MPEG audio data stored in the memory 72, a demultiplexer 74 for separating data received from the MPEG audio decoder 73 into data corresponding to

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accompaniment sound and playing sound and data corresponding to accompaniment sound and outputting the separated data under the control of the CPU 71, a first audio presentation part 75 for comparing the PTS (Presentation Time Stamp) in the data corresponding to the accompaniment sound received from the demultiplexer 74 to the signal received from the STC 77 to control presentation time of the data, and a second audio presentation part 76 for comparing the PTS (Presentation Time Stamp) in the data corresponding to accompaniment sound and playing sound received from the demultiplexer 74 to the signal received from the STC 77 to control presentation time of the data, thereby processing the audio signal using signals received from the demodulation part 40 to separate the data into data corresponding to a first data containing accompaniment sound and playing sound, and a second data containing playing sound only, and outputting the separated data.

The switch 50 selects one of the data corresponding to the accompaniment sound and playing sound, or to only the playing sound received from the first and the second audio presentation parts 75 and 76 of the audio signal processing part 70 and transmits the selected data under the control of the control part 30.

The D/A converter 60 converts the data received from the switch 50 under the control of the control part 30.

The system and operation for processing a video signal is the same as for a conventional karaoke CD system.

Operation of the device for controlling a karaoke CD audio signal in accordance with this invention as described above is to be explained hereinafter.

The encoded karaoke-CD data having coding information applied thereto is added with a distinguishing value and has EFM signals demodulated through the first demodulation part 41 which is a EFM/CIRC (Cross Interleave Read Solomon Code) and errors of the CD are corrected. The interleaved data at encoding is demodulated through the second demodulation part 42 which is a CD-ROM decoder, and is separated into audio, video, and time data in the CPU 71.

In the instant, of audio data, the demultiplexing signal coming in at the reading in of the coding information is applied to the demultiplexer 74 for operation of the demultiplexer 74.

Of the data demultiplexed in the CPU 71, the MPEG audio data is stored in the memory 72 temporarily, has the compression restored through the MPEG audio decoder 73, and is transmitted. The demodulated audio data received from the MPEG audio decoder 73 is separated into audio data carrying accompaniment sound only and audio data carrying accompaniment sound and playing sound through the demultiplexer 74, and applied to the first audio data presentation part 75 and the second audio presentation part 76 respectively under the control of the CPU 71.

The audio demultiplexing signal received from the CPU 71 controls the first audio presentation part 75 to compare the received audio data Ab, carrying accompaniment sound only out of the audio signal applied thereto, to a PTS to control the presentation time and controls the second audio presentation part

76 to compare the received audio data Aa, carrying voice, i.e., playing sound and accompaniment sound out of the audio signal applied thereto to a PTS to control the presentation time. The audio data received from the first and the second audio presentation parts 75 and 76 is applied to the D/A converter 60 through a switching operation of the switch 50 under the control of the control part 30, where it is converted in the D/A converter 60 and output to a speaker.

In this instant, the switch 50 is operated under the control of the control part 30 which is operated according to the key signal applied through the key matrix 80.

Operation of a karaoke CD audio system is to be explained hereinafter, referring to FIG. 7.

First, a subheader and packet header are read 100, and demultiplexing is carried out to separate into an audio demultiplexing signal and a MPEG audio signal 101. The separated MPEG audio signal is decoded to separate into audio signals containing accompaniment sound only, and audio signals containing both playing sound and accompaniment sound using the audio demultiplexing signal 102, and the PTS of each packet is read to synchronize and transmit signals 103.

The MPEG audio format, as shown in FIG. 8, generates separated MPEG audio signals Aa and Ab, and audio demultiplexing signals by extracting coding information from the subheaders of each sector, and by reading the packet header and comparing it to the STC, thereby the presentation time of the data can be controlled.

As has been explained, this invention for a karaoke CD system increases the enjoyment of karaoke by reproducing audio data containing a player's voice, i.e., playing sound and accompaniment sound, and audio data containing accompaniment sound selectively, which permits stereophony sound corresponding to the CD sound.

Although the invention has been described in conjunction with specific embodiments, it is evident that many alternatives and variations will be apparent to those skilled in the art in light of the foregoing description. Accordingly, the invention is intended to embrace all of the alternatives and variations that fall within the spirit and scope of the appended claims.

45. . . . .

[illegible]

demodulation means for demodulating a signal recorded on said CD which distinguishes between a first area of said CD in accordance with said karaoke CD format for recording accompaniment sound and playing sound at the same time, and a second area of said CD in accordance with said karaoke CD format for recording accompaniment sound only, and for outputting a demodulated signal;

switching means for selecting one of said first and second data signals output by said audio signal processing means and outputting a selected data signal;

Digital-to-Analog (D/A) converting means for converting said selected data signal to an analog data signal and outputting said analog data signal to a speaker; and

control means for controlling said demodulation means, said audio signal processing means, said switching means, and said D/A converting means.

3. The device as claimed in claim 2, wherein said demodulation means includes:

a first demodulator for carrying out Eight-to-Fourteen (EFM) demodulation in accordance with said karaoke CD format to distinguish between a first area of said CD in accordance with said karaoke CD format for recording accompaniment sound and playing sound at the same time, and a second area of said CD in accordance with said karaoke CD format and for outputting a first demodulated signal; and

a second demodulator for demodulating signals recorded in interleaved sectors of said CD in accordance with said first demodulated signal to produce demodulated sector interface signals and applying said demodulated sector interleave signals to said audio processing means.

4. The device as claimed in claim 3, wherein said first demodulator operates in accordance with EFM/CIRC (Cross Interleave Read Solomon Code).

5. The device as claimed in claim 3, wherein said second demodulator further comprises a CD-ROM decoder.



6. The device as claimed in claim 2,

wherein said audio signal processing means includes:

a CPU for separating audio data and time data contained in said demodulated signal received from said demodulation means under the control of said control means,

a System Time Clock (STC) for generating a synchronizing signal using said time data received from said CPU,

a memory for receiving and storing said audio data from said CPU,

a MPEG audio decoder for decoding said audio data stored in said memory,

a demultiplexer for recording and separating data from said MPEG audio decoder into first data corresponding to accompaniment sound and playing sound and second data corresponding to accompaniment sound, and outputting said first and second data under the control of said CPU,

first audio presentation means for comparing a Presentation Time Stamp (PTS) of said second data received from said demultiplexer to said synchronizing signal received from said STC to control presentation time of said second data, and

second audio presentation means for comparing a PTS of said first data corresponding to accompaniment sound and playing sound received from said demultiplexer to said synchronizing signal received from said STC to control presentation time of said first data.

# ABSTRACT

This invention relates to a karaoke CD format and a device for controlling audio signals utilizing the karaoke CD format which provides a user with selective reproduction of the voice of a player.

The karaoke CD format includes a CD format divided into video sectors and audio sectors. The audio sectors are further divided into a part for recording accompaniment sound and playing sound at the same time and a part for recording accompaniment sound only. There is provided record coding information for distinguishing the parts.

FIG.1 Prior Art

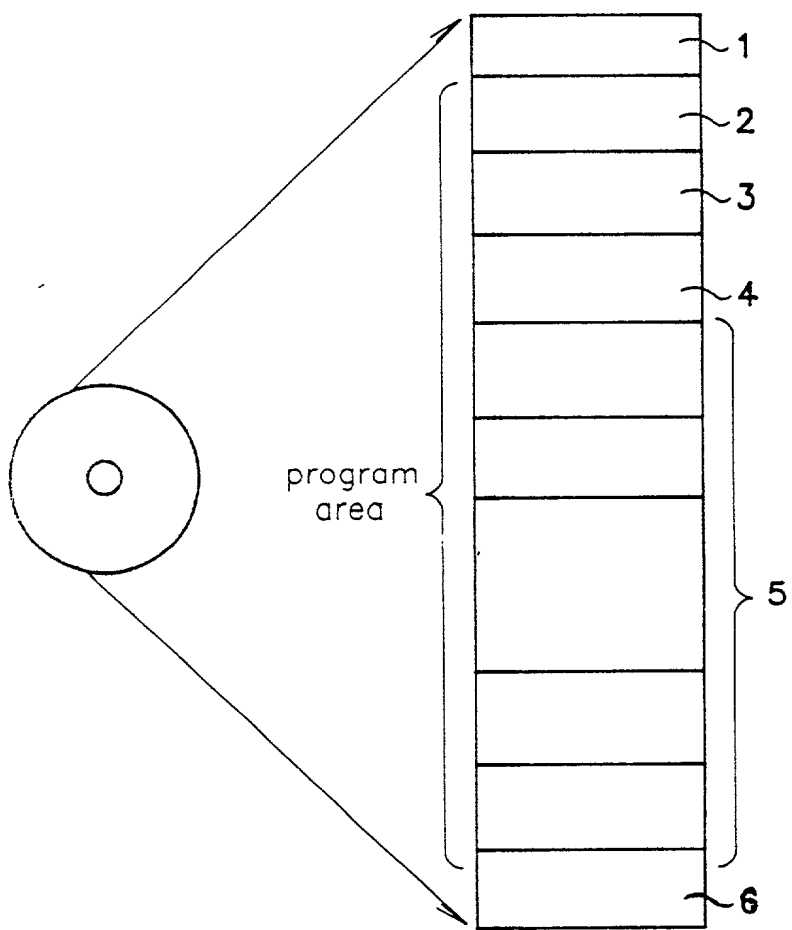


FIG. 2 Prior Art

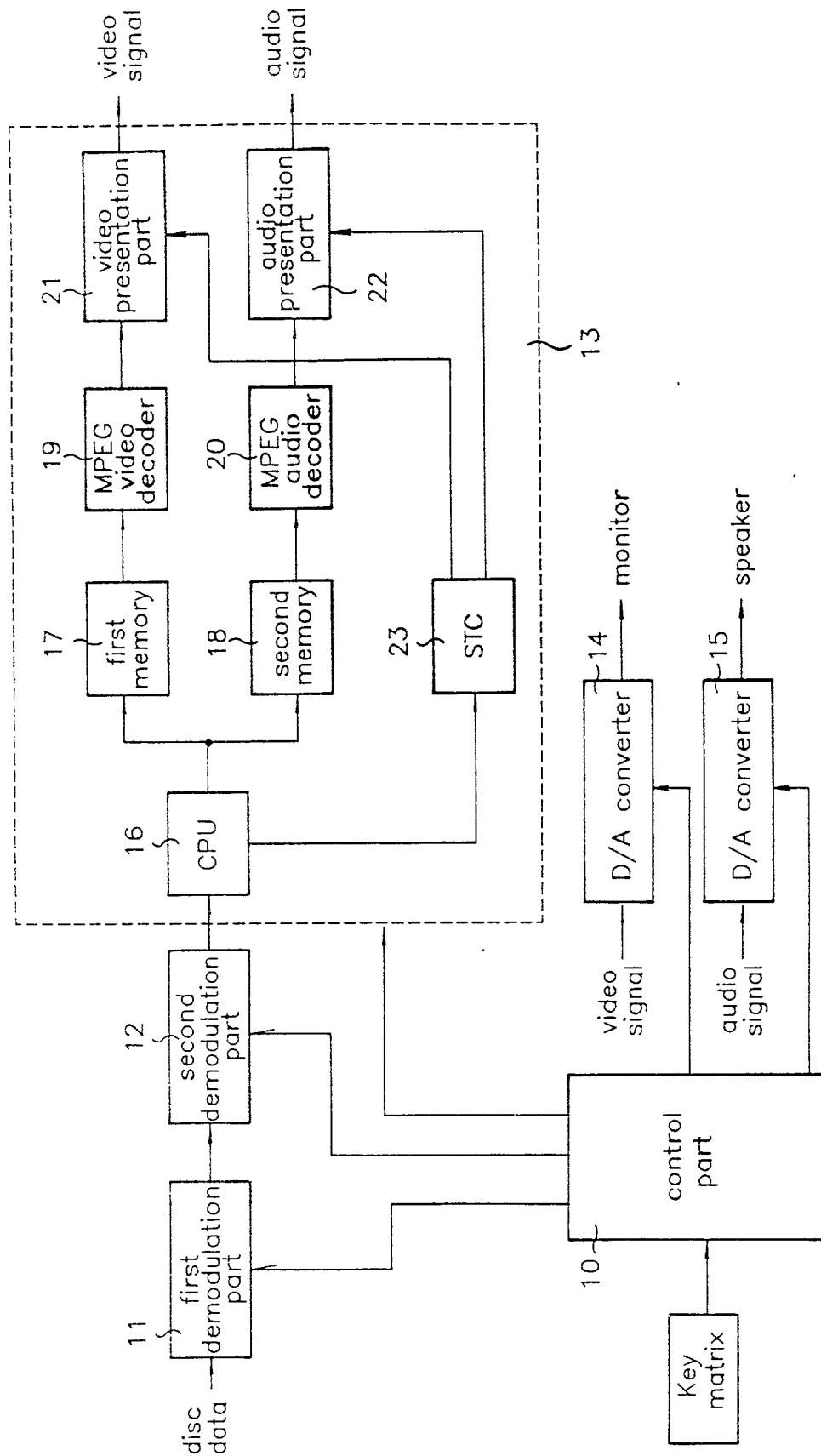


FIG.3

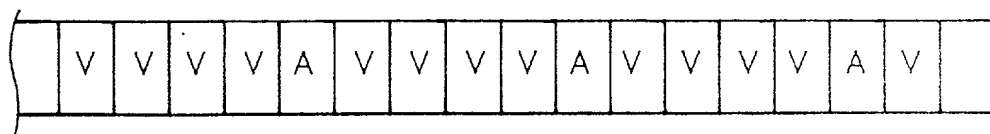


FIG.4

	MPEG video	MPEG audio
file number	sequence number	sequence number
channel number	\$ 01	\$ 01
submode	% ×11×001×	% ×11×010×
coding number	\$ 0F	\$ 7F

FIG.5

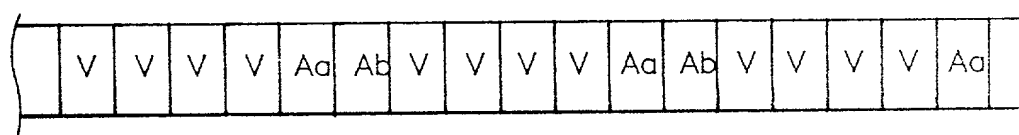


FIG. 6

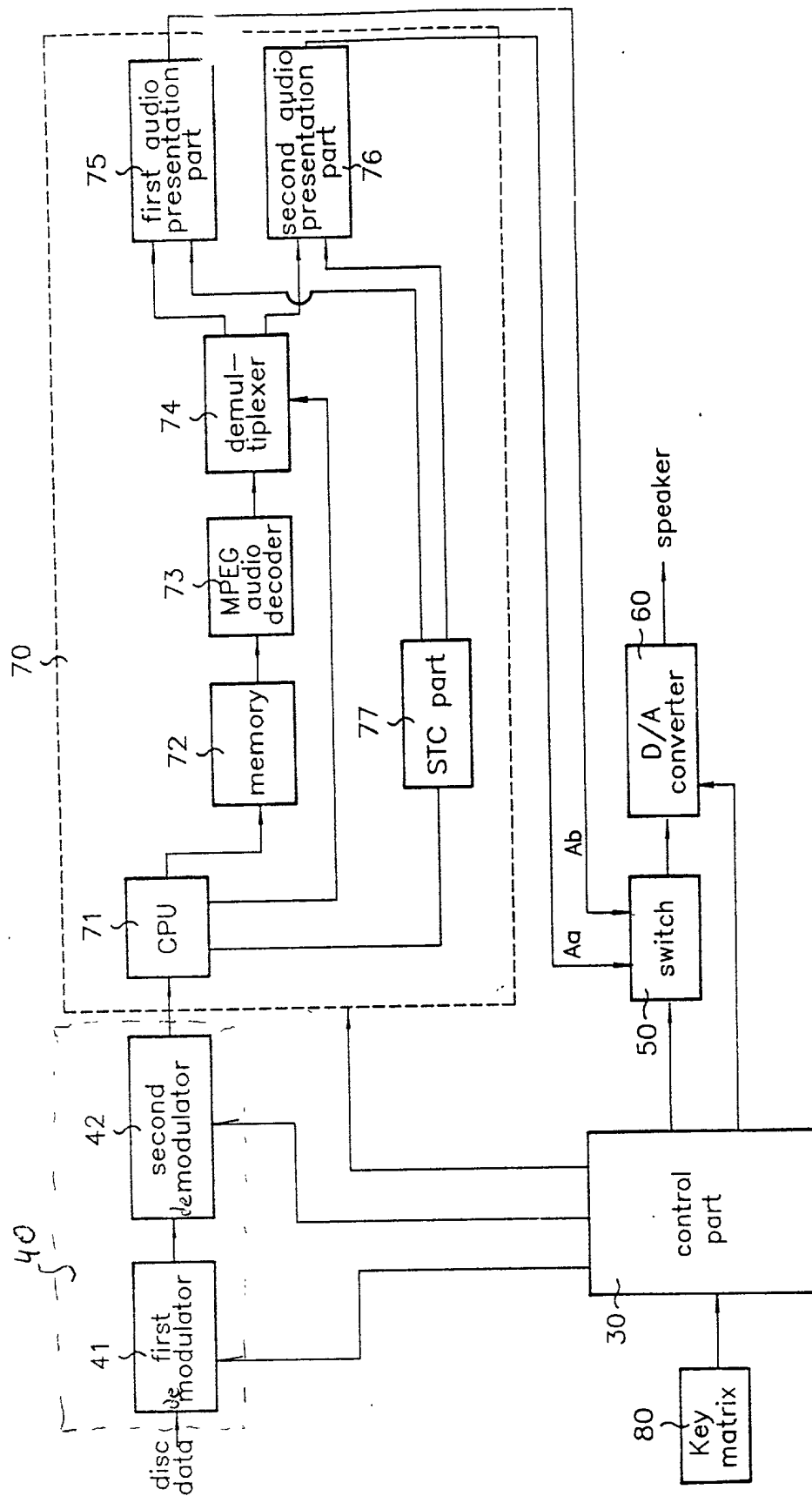


FIG.7

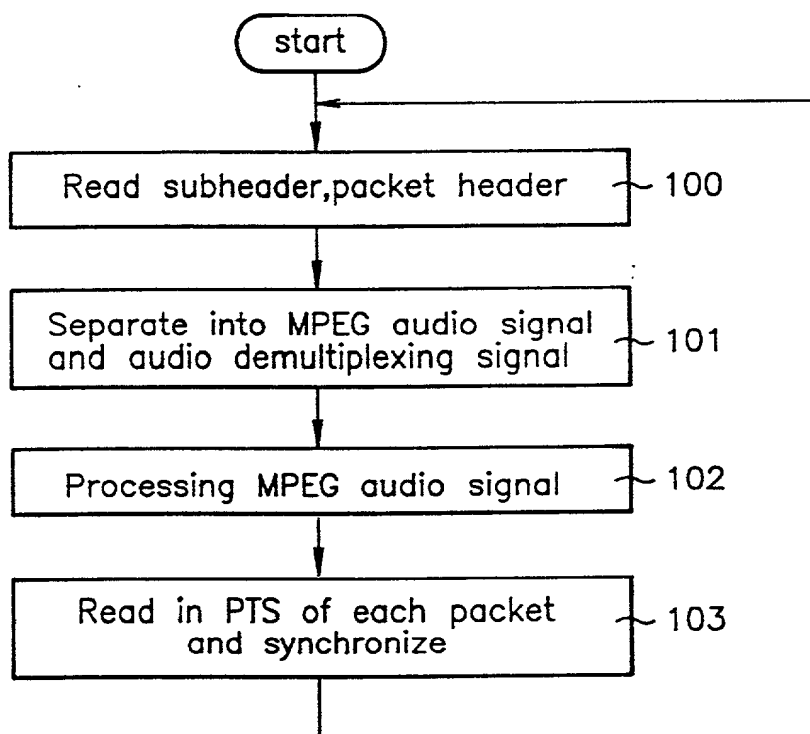
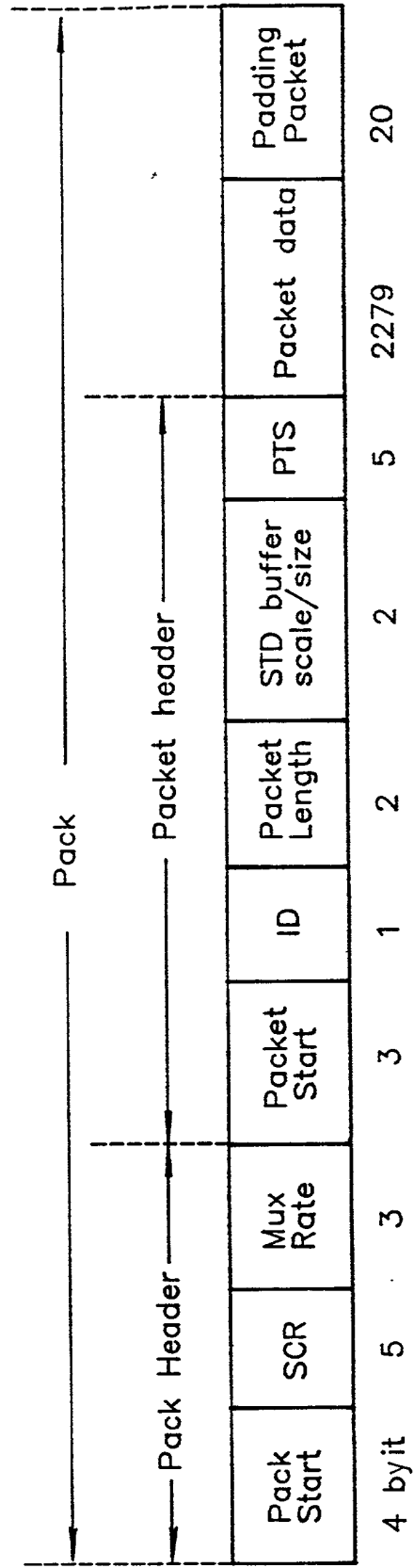


FIG.8





As a below named inventor, I hereby declare that:

My residence, post office address and citizenship are as stated below next to my name,

I believe I am the original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if plural names are listed below) of the subject matter which is claimed and for which a patent is sought on the invention entitled:

KARAOKE CD FORMAT AND DEVICE FOR CONTROLLING AUDIO SIGNAL

the specification of which:

is attached hereto; or

was filed as United States application Serial No. on September 16, 1994 and was amended on (if applicable); or

was filed as PCT international application Number on and was amended under PCT Article 19 on (if applicable).

I hereby state that I have reviewed and understand the contents of the above-identified specification, including the claims, as amended by any amendment referred to above.

I acknowledge the duty to disclose to the U.S. Patent and Trademark Office information which is material to the patentability of claims presented in this application in accordance with Title 37, Code of Federal Regulations, §1.56(a).

I hereby claim foreign priority benefits under Title 35, United States Code, §119 of any foreign application(s) for patent or inventor's certificate or of any PCT international application(s) designating at least one country other than the United States of America listed below and have also identified below any foreign application(s) for patent or inventor's certificate or any PCT international application(s) designating at least one country other than the United States of America filed by me on the same subject matter having a filing date before that of the application(s) of which priority is claimed:

PRIOR FOREIGN/PCT APPLICATION(S) AND ANY PRIORITY CLAIMS UNDER 35 U.S.C. 119:

COUNTRY (if PCT, indicate PCT)	APPLICATION NUMBER	DATE OF FILING (day, month, year)	PRIORITY CLAIMED UNDER 35 USC 119
Korea	18841/1993	17 September 1993	X Yes No
			Yes No
			Yes No
			Yes No
			Yes No
			Yes No

Combined Declaration For Patent Application and Power of Attorney (Continued)  
(includes Reference to PCT International Applications)

Atty. Docket No. 04805.0072

I hereby claim the benefit under Title 35, United States Code, §120 of any United States application(s) or PCT international application(s) designating the United States of America that is/are listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in that/those prior application(s) in the manner provided by the first paragraph of Title 35, United States Code, § 112, I acknowledge the duty to disclose to the U.S. Patent and Trademark Office all information known to me to be material to the patentability of claims presented in this application in accordance with Title 37, Code of Federal Regulations, §1.56(a) which became available between the filing date of the prior application(s) and the national or PCT international filing date of this application:

PRIOR U.S. APPLICATIONS OR PCT INTERNATIONAL APPLICATIONS DESIGNATING THE U.S. FOR BENEFIT UNDER 35 U.S.C. 120:

U.S. APPLICATIONS		STATUS (Check one)		
U.S. APPLICATION NUMBER	U.S. FILING DATE	PATENTED	PENDING	ABANDONED
PCT APPLICATIONS DESIGNATING THE U.S.				
PCT APPLICATION NO.	PCT FILING DATE	U.S. SERIAL NUMBER ASSIGNED (if any)		

POWER OF ATTORNEY: as a named inventor, I hereby appoint the following attorneys to prosecute this application and transact all business in the Patent and Trademark Office connected therewith.

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Combined Declaration For Patent Application and Power of Attorney (Continued)  
(includes Reference to PCT International Applications)

Atty. Docket No. 04805.0072

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under section 1001 of Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the application or any patent issuing thereon.

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